REMARKS

The Office Action dated May 31, 2006, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 10, 19 and 28 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added, and no new issues are raised which require further consideration and/or search. Claims 1-19 and 21-30 are submitted for consideration.

Claims 1-3, 10-13, 19, 21, and 27-30 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,631,122 Bi (Arunachalam) in view of U.S. Patent No. 6,657,962 (Barri) and further in view of U.S. Patent No. 6,404,738 (Reininger). According to the Office Action, the arguments filed in the previous response have been considered but are moot in view of the new grounds of rejection. Specifically, the Office Action indicates that Arunachalam teaches all of the elements of claims 1-3, 10-3, 19, 21 and 27-30 except for disclosing that the adjusting comprises resource usage calculation and that adjusting comprises renegotiating the at least one parameter of constraint or providing a recommendation based on the at least one parameter of constraint. Thus, the Office Action combines the teachings of Arunachalam with Barri and Reininger to yield all of the elements of claims 1-3, 10-13, 19, 21 and 27-30. The rejection is traversed as being based on references that neither teach nor suggest

the novel combination of features clearly recited in independent claims 1, 10, 19, and 28-30.

Claim 1, upon which claims 2-9 depend, recites a method including determining an operating condition at a first router in a differentiated service network having a plurality of routers. The method also includes propagating an indication of the operating condition at the first router to a second router and adjusting at least one parameter of constraint of incoming traffic flow based on the indication. The adjusting includes renegotiating the at least one parameter of constraint or providing a recommendation based on the at least one parameter of constraint and the adjusting includes performing parameter mapping and resource usage calculation.

Claim 10, upon which claims 11-18 depend, recite a including receiving, at a second router, an indication of an operating condition at a first router in a differentiated service network having a plurality of routers and adjusting at least one parameter of a constraint of incoming traffic flow based on the indication of the operating condition. The adjusting includes renegotiating the at least one parameter of constraint or providing a recommendation based on the at least one parameter of constraint and the adjusting includes performing parameter mapping and resource usage calculation.

Claim 19, upon which claims 21-27 depend, recites a differentiated service network including a first router and a second router coupled to the first router, the first router being associated with a first entity to determine an operating condition at the first router. The first entity associated with the first router propagates an indication of the

operating condition at the first router device to a second router. The network also includes an adjusting unit configured to adjust at least one parameter of constraint of incoming traffic flow based on the indication. The adjusting unit is configured to renegotiate the at least one parameter of constraint or provide a recommendation based on the at least one parameter of constraint and the adjusting unit is configured to perform parameter mapping and resource usage calculation.

Claim 28 recites an apparatus including determining means for determining an operating condition at a first router in a differentiated service network having a plurality of routers and propagating means for propagating an indication of the operating condition at the first router to a second router. The apparatus also includes an adjusting means for adjusting at least one parameter of constraint of incoming traffic flow based on the indication. The adjusting means includes means for renegotiating the at least one parameter of constraint or provide a recommendation based on the at least one parameter of constraint and the adjusting means includes performing parameter mapping and resource usage calculation.

Claim 29 recites a second router including receiving means for receiving, at the second router, an indication of an operating condition at a first router; and adjusting means for adjusting at least one parameter of a constraint of incoming traffic flow based on the indication of the operating condition. The adjusting means includes means for renegotiating the at least one parameter of constraint or providing a recommendation

based on the at least one parameter of constraint and the adjusting includes performing parameter mapping and resource usage calculation.

Claim 30 recites a first router, including coupling means for coupling the first router to a second router, the first router being associated with a first entity to determine an operating condition at the first router, wherein the first entity associated with the first router propagates an indication of the operating condition at the first router device to the second router. The second router includes means adjusting at least one parameter of constraint of incoming traffic flow based on the indication. The adjusting means includes means for renegotiating the at least one parameter of constraint or providing a recommendation based on the at least one parameter of constraint and and adjusting means includes means for performing parameter mapping and resource usage calculation.

As will be discussed below, the cited prior art references fail to disclose or suggest the elements of any of the presently pending claims.

Arunachalam discloses a wireless network with an IP core network that is connected to collector networks which includes various types of services and are connected to end terminals. Col. 3, lines 51-67 and Figure 1. Arunachalam also discloses an IP QoS architecture with multiple QoS managers connected to respective IP services in distinct access networks. The architecture also includes a QoS agent which is a slave device to the QoS manager. The agent configures and enforces policies within the network devices flow handling mechanism. The primary function of the agent is enforcing flow classification, marking, mapping, and treatment policies. Col. 4, lines 1-

42. The QoS agent is also advantageous in wireless systems in guiding a Radio Resource Manager (RRM) in allocating radio channels (each with different levels of QoS) and software blocks for link layer Automatic Request for Retransmission (ARQ) and power control algorithms. A wireless agent in the system is built on the IP QoS agent structure including radio link dependent functions. Col. 4, line 50-Col. 5, line 52 and Figures 2-5.

Arunachalam also discloses that QoS requirements should be met over an entire network between a source and destination. QoS is specified in an IP packet by marking a certain byte. An IP packet from the base station to a mobile device with a specified QoS is routed to a suitable MAC resource and physical channel resource so that its QoS requirements are met by using a unique identifier for each flow. QoS parameters may be provisioned on a per-flow basis as the flow traverses the network or flows may be aggregated into services classes with associated behavior for each class. QoS processing functions are divided into QoS mapping and implementation functions to change the underlying QoS provisioning mechanism/resources without changing the service call definition. Col. 6, lines 1-65. When a packet arrives from a wired network to a wireless network, a QoS mapping function extracts the type of service byte that indicates the QoS desired by the IP packet and send the byte to the wireless QoS agent. The wireless QoS agent examines the byte, maps it to the class of service, assigns a tag to the flow and returns the tag to the mapping function and RRM for later IP packets of the same flow. The RRM decides on the MAC layer and physical layer resources to be allocated to a wireless service class. A scheduler schedules all incoming frames from the MAC layer

based on weights assigned by the wireless QoS agent. The scheduling algorithm may be a simple priority queuing or a weighted fair packet queuing algorithm. If the weighted fair packet queuing is used, the wireless QoS agent adjusts the weights based on the knowledge of the precedence and bandwidth allocation for the traffic classes scheduled. Col. 7, line 54-Col. 10, line 35 and Figure 8.

Barri discloses a method and system using congestion indicators within an ingress system, egress system and a switch fabric in conjunction with a coarse adjustment system and fine adjustment system within the ingress device and the egress device to intelligently manage the system. See at least the Abstract.

Reininger discloses that a QoS request is sent from a client application to a server application. For example, in figure 5 of Reininger, the client application seeks additional bandwidth in the QoS request. In another example as illustrated in figure 6 of Reininger, a client terminal requests a video title from a remote server. At the connection setup, the client application requests the desired QoS from the server and a network. The quality requested from the network is a soft-QoS specification, characterized as a satisfaction index and a softness profile. While a connection is in progress, the application can renegotiate its QoS requirements. At the server side, the terminal QoS controller computes and renegotiates the bit-rate necessary to maintain a desired target quality. The renegotiation requests are sent to soft-QoS controllers on the network's switches. While the renegotiations are being processed, and during network congestion, a variable bit rate

source uses rate control to scale its bit rate and quality to ensure that the generated traffic conforms to the allocated bandwidth. See at least Col. 8, lines 2 1-58 of Reininger.

Figures 7-9 of Reininger show conceptual implementation of systems detailing various network mechanisms for dynamic QoS support. In figure 7, a client is connected to a server across an ATM network through ATM switches that are also connected to soft-QoS controllers. Setup and modification requests are made by the server to the network. Newly established connections and modification availability are received by the server. Col. 8, line 63-Col. 9, line 3.

Applicant submits that the combination of Arunachalam and Barri fail to teach or suggest the combination of elements recited in the presently pending claims. Claims 1, 10, 19, and 28-30 recite, in part, adjusting at least one parameter of constraint of incoming traffic flow based on said indication, wherein said adjusting comprises renegotiating the at least one parameter of constraint or providing a recommendation based on the at least one parameter of constraint. The Office Action admits that Arunachalam and Barri fail to teach or suggest this claim element, as recited in the independent claims. However, the Office Action cites Reininger as teaching adjusting at least one parameter of constraint of incoming traffic flow based on the indication, wherein the adjusting comprises renegotiating the at least one parameter of constraint or providing a recommendation based on the at least one parameter of constraint. Specifically, the Office Action cites Col. 8, lines 63-67 and figure 7 of Reininger as teaching this claim element. As noted above, the cited sections of Reininger merely

discloses that an application performs QoS renegotiation across a network that uses ATM signaling. Col. 8, lines 49-51 of Reininger discloses that at the server, the terminal QoS controller computes and renegotiates the bit rate necessary to maintain a desired target quality. However, there is no teaching or suggestion in Reininger of negotiating at least one parameter of constraint based on an indication of the operating condition at the first router, as recited in the presently pending claims. Therefore, Applicants submit that Reininger does not teach or suggest at least one parameter of constraint of incoming traffic flow based on the indication, wherein the adjusting comprises renegotiating the at least one parameter of constraint or providing a recommendation based on the at least one parameter of constraint, as recited in the independent claims. Thus, Applicant respectfully asserts that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Arunachalam, Reininger nor Barri, whether taken singly or combined, teaches or suggests each feature of claims 1, 10, 19, and 28-30 and hence, dependent claims 2-9, 11-18, and 21-27 thereon.

Claims 4-7, 9, 14-18 and 22-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Arunachalam in view of Barri, Reininger and U.S. Patent No. 6,542,466 B1 (Pashtan). According to the Office Action, Arunachalam and Barri teach all of the elements of claims 4-7, 9, 14-18 and 22-26 except for disclosing that the operating condition comprises a status of stability. Thus, the Office Action combines the teachings of Pashtan with Arunachalam and Barri to yield all of the elements of claims 4-7, 9, 14-18 and 22-26. The rejection is traversed as being based on references that neither

teach nor suggest the novel combination of features clearly recited in independent claims 1, 10, and 19.

Arunachalam and Barri have been discussed above.

Pashtan discloses a wireless QoS agent for an IP network which is coupled to the network by coupling means. The coupling means includes communications means for transfer of information between the agent and a QoS manager. All of claims 4-7, 9, 14-18 and 22-26 depend on independent claims 1, 10 and 19 and thus incorporate all of the elements of those claims. Pashtan does not cure the deficiencies of Arunachalam, Reininger and Barri, as outlined above. Specifically, Pashtan does not teach or suggest adjusting at least one parameter of constraint of incoming traffic flow based on said indication, wherein said adjusting comprises renegotiating the at least one parameter of constraint or providing a recommendation based on the at least one parameter of constraint, as recited in claims 1, 10 and 19. Thus, respectfully asserts that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Arunachalam, Pashtan and Barri, whether taken singly or combined, teaches or suggests each feature of claims 1, 10, and 19 and hence, dependent claims 4-7, 9, 14-18 and 22-26 thereon.

As noted previously, claims 1-19 and 21-30 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is therefore respectfully requested that all of claims 1-19 and 21-30 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

Arlene P. Neal

Arlene P. Neal
Registration No. 43,828

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14^{TH} Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

APN:kmp